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WIRELESS

Hot Spots and emerging technologies



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Other Input	Yes	Yes	Yes	Yes
Other Features	Yes	Yes	Yes	Yes

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Response Time	8ms	8ms	8ms	8ms
Video Input	Yes	Yes	Yes	Yes
Desktop Input	Yes	Yes	Yes	Yes
Other Input	Yes	Yes	Yes	Yes
Other Features	Yes	Yes	Yes	Yes

15" LCD (1280 x 1024 native resolution)				
Features	V1755	V1750	V1730	V1735
Brightness and Contrast	300/400	300/400	300/400	300/400
Response Time	8ms	8ms	8ms	8ms
Video Input	Yes	Yes	Yes	Yes
Desktop Input	Yes	Yes	Yes	Yes
Other Input	Yes	Yes	Yes	Yes
Other Features	Yes	Yes	Yes	Yes

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Features	V1755	V1750	V1730	V1735
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Video Input	Yes	Yes	Yes	Yes
Desktop Input	Yes	Yes	Yes	Yes
Other Input	Yes	Yes	Yes	Yes
Other Features	Yes	Yes	Yes	Yes

Large Format LCD (1600 x 1200 native resolution)				
Features	V1755	V1750	V1730	V1735
Brightness and Contrast	300/400	300/400	300/400	300/400
Response Time	8ms	8ms	8ms	8ms
Video Input	Yes	Yes	Yes	Yes
Desktop Input	Yes	Yes	Yes	Yes
Other Input	Yes	Yes	Yes	Yes
Other Features	Yes	Yes	Yes	Yes

Large Format LCD (1600 x 1200 native resolution)				
Features	V1755	V1750	V1730	V1735
Brightness and Contrast	300/400	300/400	300/400	300/400
Response Time	8ms	8ms	8ms	8ms
Video Input	Yes	Yes	Yes	Yes
Desktop Input	Yes	Yes	Yes	Yes
Other Input	Yes	Yes	Yes	Yes
Other Features	Yes	Yes	Yes	Yes

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Growing the wireless ecosystem



In this issue, we turn our focus to wireless LANs—WiFi network technologies that provide the same functionality as a local area network, but without the cables. We've covered them in these pages in the past (most recently, a Test Lab on 802.11a and 802.11b networking hardware in the November 2002 issue), but the wave of new products that has started to roll out recently

The hardware includes hardware manufacturers, software developers, chip makers, and, importantly, service providers.

In the last month, Intel officially launched Centrino—a mobile-optimized processor with integrated wireless LAN components—and a slew of notebooks makers announced new models powered by it. Microsoft has released a Windows XP update that changes how the operating system connects to WLAN networks. The free download (www.microsoft.com/finch) supports Wi-Fi Protected Access (WPA), a new standards-based wireless network security solution from the Wi-Fi Alliance (www.wi-fi.org)—an industry-backed group whose mission it is to certify interoperability of Wi-Fi products and promote them.

The service providers include both large telecoms, like Bell Canada, which is adding WiFi to its connectivity mix in the form of Accuradio hotspots, and smaller start-up companies specializing in wireless setups—networks in commercial locations, like restaurants and hotels, as well as temporary networks for use during conferences and other events.

Giving mobile users high-speed access to network services in a wide range of situations is a key to building



a wireless ecosystem, according to industry research firm IDC. (www.idc.com)

In a white paper sponsored by Intel, IDC says the wireless networking industry is currently in the phase of development analogous to the period when the first gas stations made long-distance travel in automobiles possible.

"Once there were enough gas stations out there, people began to buy cars with the expectation that they could drive there pretty much anywhere," reports IDC analyst Roger Kay. He adds that investing in hotspots will drive the industry forward.

Workflows below: in the same IDC report, Key describes how this expanding various ecosystem will help concrete users stay connected all the time, and

"the edges of personal time will blend most smoothly into work time" (The report also has a breakdown of the number of extra hours work per week a large enterprise would get from each employee with a Wife.commed NC.)

Of course, what's good for business is also good for personal use—whether it's setting up a wireless network, or knowing you can use most of the usual, or being able to check movie listings at a kiosk on your wireless-enabled PDA—and, in that case, the price is right. If you already have a notebook PC or PDA, an \$825 (list) net server adapter is simple to install and prices start at under \$100 (list) one at home, you'll need a wireless router, too. The appeal of newer hardware with integrated wireless components will be its lighter weight and longer battery life—enhancing its portability, and cutting the number to AC outlets—but the price of entry will be considerably higher.

The variety of access options for work or personal use in public places will eventually expand, according to IDC's crystal ball, enveloping those wireless LANs in a web of white area networks.

While the scenarios painted by proponents—which use wireless LAN use by notebooks and PDAs as an example—may not appeal to everyone, take heart: road warriors needing their e-mail or the Web via a hotspot at the local coffee joint are going to be much quieter than some cellphone users who loudly carry on that side of a phone conversation without regard to those around them.

Moran Robinson, Editor



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WHAT'S NEW

Bye-bye VCR. Hewlett-Packard's newest **Media Center PC** (www.hp.com/go/mcnewsmc), with the catchy name **864n**, allows users to record TV programs to the 360 GB hard drive, then burn them to a rewritable DVD that can be played on a standard home DVD player (not every player is compatible—see www.hp.com/go/compatibilitylist for a list of tested players and drives). The PC comes standard with a personal video recorder (PVR) TV tuner card and a DVD+RW/DVD-RW drive, and can be operated with a remote control in addition to its regular keyboard and mouse input.

The 864n also features a fireWire one-media card reader on its front panel for transferring files to and from digital cameras and other peripherals, as well as a total of five USB 2.0 ports and two IEEE 1394 (also known as FireWire) ports.

The 864n is expected to retail for approximately \$2,599.

It is a truth universally acknowledged that a man in possession of a digital camera must be in want of more storage. Bearing that in mind, **SanDisk**

(www.sandisk.com) aims to please, with two new SecureDigital (SD) cards with capacities of 1 GB and 512 MB, and two new CompactFlash (CF) cards with capacities of 2 GB and 4 GB.



The 512 MB SD cards are expected to be available in the second quarter for US\$169.99, and the 1 GB SD cards are expected in the third quarter for US\$249.99. SanDisk says the cards use non-volatile NAND memory chips based on multi-level cell technology which allows two bits of data to be stored in each cell, thereby doubling memory capacity.

According to SanDisk, its new 4 GB CF card will store more than 4,000 high-resolution photos or more than 1,800 songs. The two new CF cards are in the Type I for-

mat, and are priced at US\$999 for the 4 GB card and US\$499.99 for the 2 GB card. Both are expected to ship this summer.



The company has also introduced a line of single-slot card readers, called **ImageMate**, that connect via USB 2.0 and are about the size of a deck of cards. The new models are compatible with the following media:

Model	Media
SD24-91	CF Type I & II, SD, Microdrive
SD24-92	SD, Microdrive Cards
SD24-93	SmartMedia, CF Picture Card
SD24-94	Memory Stick, Memory Stick Pro



All the card readers will be released this summer at prices ranging from US\$15.99 to US\$24.99.

Someday soon, the "30 miles to school in a blizzard" legend will be replaced with, "When I was your age, dictionaries were big enough to sit on, heavy as bricks, and we had to have a separate one for each language." **PhatStor** Corp. (www.phatstor.com) has put 10 dictionaries in eight languages into its new spellchecking program for the Pocket PC platform. **PhatSpell** includes Dutch, English (American and U.K.), French, German, Italian, Portuguese (European and Brazilian), Spanish, and Swedish, and users can choose which of them they want to install. The company says the program will run in almost any text-based application on the Pocket PC, leaving few excuses for spelling mistakes anymore, wherever.

The application is available from the company's Web site for US\$19.95 at press time. The suggested list price is US\$29.95.

Continued on page 37

Spotlight



Photostore a mini theatre for images, tunes

The **Photostore 100P**, the latest manufacturer-specific PDA from the Springfield, IL-based **Photostore Trading** (www.photostoretrading.com), is a very cool and like Creative (also based in Illinois), it stars under a 100 as its 20 GB hard disk. But unlike the former, its simplicity isn't its strong point, and even a "mini-theatre" includes a sophisticated slide-show menu, one out of your digital camera and one on the Photostore's front slot, such as a zoom button, and the images are presented. An adapter allows you to view fourth other storage card formats, such as the new year's photo or a 2001 calendar. The 100P sports a 100,000 4-bit color LCD screen and has the resolution of a 100P.

It's difficult to see a lot of similarity between the Photo Market and the other PDA's we recently reviewed, but the Photostore reminds the other PDA's quite advanced connectivity is rather portable storage device. It uses a removable Lithium-ion battery and is powered by a RISC processor, giving a Linux operating system. The main applications are a photo viewer, a music player, an MP3 player, a calendar, a clock, and a time management system. The external disk system is on the top of the device. The 100P display shows a picture of a slide and controls is found on the bottom.

The 100P's list price is \$249.95, which ranges through our hardware list. It's a PDA that's a little bit different.

The new card on the block

Just when we needed another storage card format, **SanDisk** (www.sandisk.com) showed off its new **miniSD** card at the annual GLOBE trade show in Germany in March. The "credit-card-sized" flash memory card is designed for the mobile phone market, according to SanDisk, and was recently named by the SD Association as an ultra-small five-factor extension to the SD card standard.

The card will replace this year's CompactFlash (CF), SD, SD-Lite, and SD-M. They are electrically and software compatible with the current SD standard, and SanDisk will also offer an adapter that allows the miniSD card to fit existing SD card slots. Suggested pricing for the 32 MB card plus the adapter will be approximately US\$29. Prices on the higher capacity cards have not been set.



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Hotspot access heats up in Canada

By David Tanaka

The past six months in Canada has seen a flurry of announcements in public wireless network access—hotspots. Telcos like Bell Canada, wireless startups, such as FastPort and Spacenet, and technology companies like Intel and Toshiba have all stepped forward with plans to roll out hotspots.

What are hotspots? They are areas within publicly accessible places that are equipped with 802.11b or Wi-Fi wireless network access points. Guests or users of the facility can take their Wi-Fi-equipped notebook or handheld computer into one of these areas, log in, and gain access to the Internet, check email, or even access company resources securely through virtual private networks (VPNs).

Hotspots began appearing a few years ago, but as a premium service in hotel chains, airports, and other areas frequented by executive-class travelers.

"One of the desires of this kind of service is that it's only for the business class traveler and only for the lounges that they go to," says Sean O'Mahony, president and chief executive of Vancouver, B.C.-based FastPort. But, he continues, "increasingly, businesspeople fly with budget carriers, and there are no executive lounges and no business class. They're sitting down in the back, and they're sitting in the lounge waiting for their airplane. And they want service too."

FastPort is focusing on second-tier airports, says O'Mahony, "essentially following Western access the country." The company recently announced hotspot agreements with Abbotsford Airport, in B.C.'s Fraser Valley, and Burlington



Airport, north of Toronto

The notion of hotspots for the masses captured the public's fancy when the Starbucks coffee chain announced a deal with now-defunct MobileStar to bring wireless Internet access to a number of Starbucks locations. T-Mobile and Hewlett-Packard picked up the adobe and, last August, launched T-Mobile

HotSpots at about 1,800 Starbucks locations in the U.S. While Starbucks locations in Canada have not yet been hotspot-enabled, other coffee chains have. And overall, the list of hotspot-enabled locations in Canada is growing bigger and broader, now including airport lounges and train terminals, hotel lobbies, conference facilities, sports cen-

ters, restaurants, coffee bars, museums, public libraries, college campuses, and shopping centers in downtown business districts.

Sound good bet...

It might appear like we're on the verge of a wireless LAN revolution, but there are a few big issues that still need to be resolved. What and how will pay for the privilege of using a hotspot in full being worked out by the industry. Within controlled-access facilities, such as hotels or first class lounges at airports, access might be free to premium-level guests. On university campuses, it could be worked out the student fee structure.

But in open areas, like food courts, where hotspots would be like public telephones, service providers are still trying to discover the best fees and payment methods and, consequently, many such hotspots are at the first trial stage. For the hotspots, Toshiba of Canada is helping enable, a number of payment models are being looked at, including coupons and subscriptions, says Mary Ann Yule, Toshiba vice-president of marketing.

Another big issue is service transparency. Many companies, big and small, are getting into the hotspot delivery business, but as FastPort's O'Mahony notes, a practical accounting mechanism needs to be worked out amongst all the carriers. Because the public won't stand for having to access several accounts to move from an airport lounge to a hotel conference center to a large bar.

"At this stage in the business we're all complementary," he says of his competitors. "Let's team with each other."

Continued on page 16



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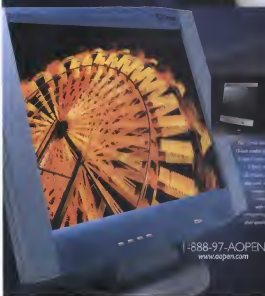
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G! What happened to next-gen wireless networking?

By Sean Corcoran

With the recent launch of Intel's Centrino mobile products, it seems that wireless networking is getting another big push towards the mainstream, but it may have long gone wireless networking fans scratching their heads about something whatever happened to 802.11g?

While Centrino has firmly integrated the 802.11b standard into its new spec, a few pointed questions were thrown Intel's way about the decision, especially since 802.11a and 802.11g networking offer 54 Mbps wireless transmission, five times 802.11b's 11 Mbps.

The decision to bypass 802.11a was not all that repulsive since the protocol uses the 5 GHz radio spectrum, it has less interference from other wireless devices, but the range of the product



Gaming on 802.11g: Though some manufacturers are taking a wait-and-see approach, Apple (left) (iMac and iBook) and Asus (right) (Wi-Fi-NetWorX network card, left) have released products using the unapproved standard.

drops as the shorter wavelength can't get through concrete, metal, or even wood as easily as 802.11b's 2.4 GHz signal. Further, it's become nearly a corporate standard, and it's not compatible with the much more popular 802.11b without additional hardware installation.

The newer 802.11g has fewer such problems; it uses the same 2.4 GHz spectrum as 802.11b, which means that it can be used over the same distance as 802.11b—even through walls. Even better, 802.11g is backwards-compatible with 802.11b—802.11g access points are compatible with 802.11b wireless cards, and vice versa—which means a less costly and less stressful upgrade path for companies that already have 802.11b wireless networks installed. Best of all, products with 802.11g are expected to only be marginally more expensive than

802.11b products. So where's all the "g"?

The biggest problem with the 802.11g standard is that, well, it's not quite a standard yet, at least not officially. The numbers 802.11g actually refer to a technology standard set by the IEEE (Institute of Electrical and Electronics Engineers, www.ieee.org), and at the time of writing, it had not yet ratified the 802.11g as an official standard. Because of that, manufacturers and retailers that have been pushing hard on the 802.11b and 802.11a field have been more reticent to convert to 802.11g products.

That doesn't mean the products aren't already out there, though. Apple (www.apple.com) has integrated 802.11g wireless into its updated version of the iMac, known as iMac G4, and is starting to integrate the latest technol-

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Wireless security: a little common sense goes a long way

Wireless networking, wireless hooking—no, it's all a bit confusing. For anyone looking at wireless networking in their small business or home, the most confusing piece of the entire puzzle lies in the security of the system.

There are a myriad of issues involved in wireless network security, but mainly they all come down to the same thing: common sense.

Start with the WEP (Wired Equivalent Privacy) security options that are included with most 802.11 network solutions provided by mainstream wireless equipment makers, such as NetScout and Linksys.

In a hurry to get wireless networks up and running, it seems many home users can't bother figuring out how to configure WEP and simply leave it switched off. According to a survey conducted by a group called Worldwide Wireless (www.worldwidewireless.org) in November 2002, it looks like the biggest security hole lies in the space between the ears of many wireless users.

The Worldwide Wireless is so scared because it involved a band of wireless users driving around residential neighborhoods looking for "open" wireless networks that they could tap into.

Any success they achieved was simply

due to the fact that users had not switched on and configured WEP. It turned out that out of 25,000 users they found with wireless LANs, some 72 percent did not have WEP enabled on the access points—leaving those home networks wide open to sharing not only their Internet access, but also any files and printers that they happened to have shared on their home networks.

Of course, even WEP is not completely impenetrable and industry experts estimate that it could be accessed by a determined hacker within four or five hours. But by that time you would hopefully notice the guy with the notebook comput-

er sitting at the bottom of your driveway.

Additional wireless security measures are all about using common sense. For example, you are sharing resources over a wireless network in your home, you should make sure that you enable yourself of the ability to use ID and password protection.

You also need to ensure that the ID/password combination you are actually making sense. There's little point in using anything too obvious, such as your last name. The best possible password is one that is totally random and makes up and lower case, as well as numbers and letters.

—Graf Wheelerlight

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Hotspot access heats up in Canada

Continued from page 35

first worry that all the pieces that go into a hotspot—hardware, software, location-specific issues, and the service provider's offering—work together to provide a trouble-free customer experience. The second goal is to identify such hotspots with signage and logos, in essence giving them a seal of approval. Intel's stake in hotspots is closely tied to Centrino, a new notebook architecture that includes a Pentium M-based processor called the Pentium M, an Intel E530M chipset, and networking—including Wi-Fi—that together process more processor time in a smaller form and with better battery life. But it also goes beyond a single product.


The Centrino launch is just the beginning of Intel's overall strategy towards "unfettered" information access, said Pat Gelsinger, Intel's chief technology officer, during the Centrino launch event in Toronto. As one example of this, he talked about Intel's silicon radio program, the goal of which is "to integrate everything into CMOS silicon, to enable radios into every chip we build."

The result might be something like an

always-on phone—a cellular phone no bigger than a camera—and certainly smaller and more energy efficient radios for portable computers. Another project in the Intel labs is the development of smart antennas, which Gelsinger said would result in smaller and more capable radios with higher energy efficiency and greater range.

The Centrino launch itself was an unusual event, taking place in three separate locations. The formal announcement took place at the Royal York Hotel, one of the Fairmont Hotels and Resorts chain, which gave the opportunity to announce it had completed hotspots in its 48 luxury hotels, all verified by Intel's program. After that, we took a stroll down to the Union Station shopping concourse, where Bell Canada has established an AccessZone hotspot through which potential customers will be able to test Centrino-powered notebooks from various manufacturers over Bell's hotspot. The tour ended at the Air Canada Centre, another Wi-Fi-enabled facility, where manufacturers were showing their new Centrino-based notebook models.

Continued on page 24




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• WIRELESS •

Hotspot access heats up in Canada

Continued from page 32

In February, Toshiba of Canada announced its Toshiba Hotspots program, which Yule said was to help its resellers bring hotspots to a wide range of their business customers. "Toshiba's philosophy has been around the [retailer] channel. Our channel partners already have IT relationships with a variety of restaurant chains and hotel chains so we'll be working closely with them," she said.

Toshiba made an announcement at a Big Daddy's restaurant in downtown Toronto, one of the restaurants recently hotspot-enabled by Toshiba business partner, Boldstreet Wireless. This Ottawa-based company has also enabled hotspots at approximately 14 Lane Star restaurants in Ontario.

Toshiba's plan is somewhat less grandiose than Intel's, although it too is tied to hardware development. In conjunction with the hotspot announcement, Toshiba also announced a \$399 wireless router, the WRC-1000ES, and says that working with one of its business partners, a business could set up a hotspot for less than \$300. Yule said Toshiba's goal is to enable 1,000 hotspots

in Canada this year.



In December 2001, Bell Canada introduced the AccessZone hotspot brand, with pilot installations in several locations including airports in Calgary, Toronto, and Montreal; VIA Rail lounges in Montreal and Toronto; a marina, public library, and St. Lawrence College in Kingston, Ont.; and Mount Sinai Hospital in Toronto.

Bell's AccessZone hardware is available the size of a pay telephone and can be installed next to a bank of pay phones. A central part of Bell's strategy is to plug-back hotspot deployment on the phone infrastructure it already has. □

Real world hotspotting

Two of the last three trade shows I attended this year provided free 802.11b wireless Internet access in the media room. The ability to just pop down anywhere with your notebook (in range of the access points) and be immediately connected to the Internet is gratifying—when it works.

At January's Macworld in San Francisco, the main problem was too many AirPort-equipped notebooks (AirPort is Apple's brand of 802.11b products) for too few access points. The room was quite broad, extending beyond the windows, into the lounge, and even the corridor. For most of the working day, however, getting a connection was a hit or miss proposition—not surprising because the working area, lounge tables, and even floor space in the common areas were littered with notebook-toting writers all trying to get online wirelessly. When you managed to grab some bandwidth, it was sweet to be able to get online without moving from wherever you happened to be. Wandering down some hallways, my iBook also picked up other AirPort connection nodes, although most of these were secured.

At the Consumer Electronics Show in Las Vegas, also in January, I noticed that fewer writers had brought their own note-

book computers to the media room and maybe because of this, access was never a problem. I had to make just one change to the iBook wireless setting, changing from AirPort networks to "other" in order to discover the media room's 802.11 access point and get online. Overall, the process was very straightforward, exactly what you'd hope for.

As a counterpoint to these, I attended the Photo Marketing Association conference—also in Las Vegas—in March, traveling without a notebook computer for the first time in a few years. I did have a Pocket PC-based handheld and some accessories, including a WiFi card (which I ended up not using because the media room was not WiFi-enabled). The Pocket PC with a fold-up accessory keyboard proved to be enough for notes and rough drafts of articles. To check email, I had previously subscribed to a free service called mail2web (www.mail2web.com), from Toronto-based SoftCom Technology Consulting Inc., which allowed me to securely access my company mail account using a Web browser. Whenever I wanted to check email, I had to wait just a few minutes for a computer to become available in the media room.

—David Sencoff

Digital audio: the x.1 equation

TCP Test Lab looks at audio cards for multi-speaker setups

By Sean Connolly

If you've been looking at audio cards and speaker sets lately, you've likely noticed a mysterious label somewhere on the box claiming the product is compatible with 2.1, 5.1, or some other variation on x.1.

This refers to the number of speakers included in the set or supported by the audio card. The first number indicates how many "surround" speakers are in the set, and the last number refers to the subwoofer (thus, it's always "1"). The configurations are as follows:

- 2.1: A pair of stereo speakers and a subwoofer
- 4.1: Two front speakers, two rear speakers and a subwoofer
- 5.1: Three front speakers (left, right, and centre), two rear speakers (left and right), and a subwoofer
- 6.1: Three speakers (left, right, and centre) in both front and rear and a subwoofer
- 7.1: Three front speakers (left, right, and centre), two rear side speakers, and two rear speakers

If you're considering upgrading from a pair of stereo computer speakers to a multi-channel setup, it's worth remembering that anything beyond 2.1 typically requires strapping wires to your rear speakers, and having a spot to set up the speakers behind you when you're at your workstation. In a small workplace or a small apartment, such a multichannel



setup may be impractical, and has the potential to be an expense if you don't have a way to hide the wires.

One thing worth noting is that any multi-channel product, either speakers or audio hardware, is almost certainly compatible with any version of x.1 with a smaller "x" in other words, an audio card rated for 7.1 output typically handles 6.1, 5.1, 4.1, and 2.1 configurations without any trouble. (You may have to reposition your rear speakers, though.)

For more information on digital audio and speaker configurations, Dolby Laboratories has an extensive information archive online at www.dolby.com.

Here are a few of the newest multi-channel add-in cards available.

ADoPen Cobra AW-850 Deluxe

From: ADoPen Inc., www.apopen.com

Estimated price: \$60 (from \$54.00)



- 5.1 positional audio
- C-Media 8738 MB processor supports 48 kHz digital
- Cool features pyrolytic/MO
- Second header features casual SPDIF output and optical input (see optical cable included in box)

- AutoMedia (CD/DVD player), InterVideo WinDVD (DVD player) and WinPlay (DVD encode/playback) software included

ADoPen's Cobra AW-850 Deluxe is, as you'd guess from the name, the deluxe version of its AW-850 audio card. These cards use a C-Media audio processor, which provides reasonably good 5.1 surround sound at a very reasonable price.

What's deluxe about this version? It comes with a second bracket featuring control and optical SPDIF inputs and outputs in addition to the six-channel outputs and MIDI/synch port found on the main card. The inclusion of an optical cable in the box is another really nice touch, as it can be almost as expensive as the whole bundle when purchased separately.

The sound on the card is quite good, considering the price point; it certainly doesn't meet the higher-end cards in terms of sound quality, but for users who aren't as concerned with multiphase sound quality, it's pretty fine. During our tests, the quality of both DVD and gaming playback was very good.

The Cobra AW-850 Deluxe is compatible with Windows 95, 98, Me, NT 4.0, 2000, and XP.

Creative Sound Blaster Audigy 2 Platinum EX

From: Creative Technology, www.creativeblades.com

Estimated price: \$60

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- Audigy 2 processor provides 24-bit, 96 kHz eq-

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Digital audio: the X.I equation

Continued from page 26

- 106-dB signal-to-noise ratio
- Connected to breakout box via cable attached directly to one of card (no additional bracket required, as with previous Audigy Platinum eX)
- Breakout box features two five-year, optical SPDIF in/out, two 0.25-inch stereo mono jacks and a 6.35-inch headphone jack on the front, rear has 30-pin in/out, RCA in/out and coaxial SPDIF in/out, and an 1/8-inch digital out.
- Comes with remote control
- One floppy- and power connector is required.
- TIO certified
- DVD audio player included in software bundle
- Platinum eX features MIDI/pitch bend on separate bracket.



When it comes to audio quality, Creative keeps pushing the consumer experience closer and closer to the edge of pro audio with its Audigy line of sound cards. Previously, consumer sound cards topped out at 48 kHz with 20-bit resolution. The Audigy series bumps that up to 96 kHz and 24-bit resolution, and features an amazing 106-dB signal-to-noise ratio for incredibly clean sound.

There are two new versions of the Audigy 2 Platinum. The regular version of the Platinum (5350) comes with a component that mounts on the front of your computer, so one of the full-size bays—either near you have a space free (next to your DVD or CD-RW drive) or you may have to sacrifice one of your drives. If you don't have room inside your PC for this component, you can opt for the Platinum eX, which features an external breakout box instead of the internally mounted component.

Either way, this component features a number of audio connections (optical connections, coaxial SPDIF, MIDI, RCA and headphones/microphone jacks) and you'll need one spare floppy- and power-cable inside your PC case in order to power the extra circuitry required for operation (an adapter is included in the box, if you only have full-sized power connectors available).

With the Platinum eX, Creative has given the plastic breakout box a

Continued on page 30

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DVD features alone recommend latest Roxio tool

By Eurus Townsend

When I heard of the new release of the venerable Easy CD Creator, I was curious to see if there would be any new, earth-shaking features or changes. Easy CD Creator has remained largely unchanged since its days as an Adaptec product, and although there have been improvements here and there they've largely been subtle. That's not a complaint, by the way, from the beginning it has had a fairly clean and straightforward interface that makes creating a CD a matter of drag-and-drop simplicity.

When the product review editor and I were discussing the program, he wondered if it would be an improvement over the last version, mentioning that it was often troublesome on machines in the TCP West Lab, owing to the fact that Roxio components were pre-installed in Windows XP.

I expressed surprise, as I never had any problems with the previous version on



Easy CD and DVD Creator 6

Roxio's Easy CD and DVD Creator 6 runs on Windows 98/Me/2000/XP. Estimated street price: \$50.

any of my three test systems. Well, except for occasionally not recognizing my CD burner, requiring a reinstall. And there were those times it refused to start up, citing ACPI issues—also, requiring a reinstall. Oh, and CD Copier would

always freeze up on Track 9.

OK, so maybe there was some room for improvement.

Though there are a number of new features, you still have the option of using the familiar Easy CD Creator, which has been renamed Creator Classic. The new label isn't for aill, Creator Classic looks pretty much the same as previous versions. The most noticeable differences are the updated look (the old Creator was no 2002) and a few surface tweaks: project options are accessible from buttons on the interface, and you can easily see if you're making a data, music, or bootable CD—which, as anyone who has ever gotten halfway through arranging a CD before realizing they were in the wrong mode will attest, is a plus. You can also choose the recordable drive you're using with a button on the windows' lower-left corner. Switching between a CD recorder and a DVD recorder automatically adjusts the Disc Info bar that tells you how much space you have left to work with.

Disc Copier (the renamed CD Copier) follows a similar trend. Its functionality is largely unchanged, although it includes more detailed drive information (who knew my aging Hewlett-Packard 8130 could read now audio with P-Q subchannels—whatever that means—and copy



brand-new Pioneer DVR-205 couldn't) and supports simultaneous copying to more than one recorder. Most importantly, it passed my personal test: it easily copied a disc that Easy CD Creator 5 consistently choked on.

Easy CD and DVD Creator 6 also
Continued on page 34

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DVD features alone recommended

Continued from page 32.

includes some audio tools that are almost completely different in presentation from the tools in version 5.1 I suppose that's a matter of tradition as well—these tools were almost completely different in presentation from version 4. All things audio are grouped together in a program called AudioCentral, which came to be your computer's audio hub. Frankly, I'm not sure I need another media player and organizer with visualizations and a burn engine, the two I use (Windows Media Player and RealOne) are easily available, and free. At least AudioCentral can rip MP3s at up to 320 Kbps.

AudioCentral's real power lies in its sound editor, which is also a much easier to convert LPs and tapes to CD by incorporating sound processing tools like click and pop removal directly into the application. Better still, you can adjust these and other processing tools to only affect certain areas within the sound file—and none of these effects permanently alter the original sound file, so you're free to experiment and adjust without worries. You can also insert markers to indicate where tracks start and stop, for when it comes time to burn your CD. There are still some features I'd like to see, though—things like volume leveling (which was in previous Creative suites) and fades.

The last major application to get a facelift is Video CD Creator, which in version 5 could only create Video CDs. Its interface was also awfully obscure—and I'm being charitable when I say that.

It's completely overhauled and reborn here as DVD Builder, although it can also create Video CDs and Super Video CDs.



The improvement is much more than cosmetic. DVD Builder sports a clean, one window interface that allows you to create menu animations, structured menus, and video sequences with ease. And unlike its predecessor, it accepts non-compliant videos without a fuss, performing the necessary adjustments on the fly. Placing chapter stops is a snap, and the preview function lets you see exactly how your finished DVD will play in a DVD player. It's no exaggeration to say that DVD Builder is a polished and easy-to-use as some consumer-level DVD authoring packages.

For me, DVD Builder is a Ray CD and DVD Creator's deal maker. The three other applications only gain a little in this new iteration, but if your needs are modest and you want to start burning your own DVDs or Video CDs, it can't hurt to give it a try. It's a bargain. www.creata.com (creata.com) burned its first m-CD in 1996. Now he can't stop.

Digital audio: the XJ equation

Continued from page 30.

- Onix 1gc: SoundFocus CS4341 digital sound processor and provides 48 kHz output.
- Optical output.
- Two FillPort ports on back of card plus header for additional port on the card.
- Jazped/MIDI on second bracket.
- PowerDVD Pro (X: Power Director (music editing), Yamaha AG, Hercules Media Station II, and Aud Studio speakers included).

While the Digifire 7.1 has a much shorter name than its sibling (the Ganesamaround Fortissimo III 7.1), it comes with more features. It uses the same core audio processor, but the Digifire 7.1 adds two outputs of FireWire ports (and the capability for a third), as well as a socket onboard for future expansion. The card also comes bundled with CyberLink's PowerDirector software, which allows you to edit your



movies, in addition to watching them.

The included master software makes it very easy to set up your speaker levels; it even gives you a diagram to indicate optimal positioning, if you don't already know how a 5.1 or 7.1 layout is set up.

These extra costs that justify the extra cost of the Digifire 7.1 package, even though it costs more than the Ganesamaround Fortissimo III 7.1, a mail offers better bang for the buck than any of the competitors. www.creata.com

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Digital audio hardware for home and the road

By Sean Carothers

Digital audio isn't limited to your computer. Since MP3 took the world by storm, there have been a number of products for both home and portable users that use digital audio files (MP3, Windows Media, and more). Here are a few of the newest products available.



C300 Extended-Range Wireless Network MP3 Player

From: cdcc.yvnet.com

Estimated price: \$45 (quoted from US\$49)

Cd30 is a startup company with a product designed to get your MP3 files to your home stereo—whether you want to run wires or not. While the company has several products that will tap your PC's library of digital audio files and transfer them over the network to your stereo, the C300 features 802.11b wireless networking capability at up to 90 in (300 ft.) from a wireless router. This is great news for those who don't want to string networking cables (it can be rather ugly) or those who can't (where doing so would require drilling holes through the walls or floor).

The C300 is a small unit that looks almost exactly like a wireless access point or router except that the rear of the unit has a number of audio connectors. There's an adjustable antenna on one side for your Wi-Fi connection, and a 10/100 Ethernet port on the rear. You position the C300 next to your home stereo setup, and you can connect it up using a pair of RCA jacks, coaxial SPDIF, or an optical cable.

The product requires a bit of setup at the PC end, especially if you're planning to use wireless encryption (also known as WEP). When you install the included software on your PC, a client is installed. It not only locates all music files in the folders you specify, but it finds all accessible Cd30 products on your network. You can set up playlists or control the playback at the PC end, but that's not necessary, as you can access any files in your music library right from the C300 and using the unit's remote control.

When you're using the stereo, you interface with the unit using numeric input and Voice-Guide speech output to get to your Rolling Stones MP3s, you would key in 7, 6, 5, 5, 4, 6, etc.—similar to spelling names when you're using a telephone voicemail directory. When a match is made you hear a series of tones, then the C300's synthesized voice tells you the artists it found that matched your input. The speech synthesizer has a slightly wacky way of

pronouncing certain names, but it's apparently convincing to work through those issues as they pop up. The whole process works quite well, if somewhat slowly; the major issues you'll have are remembering the exact names of things in your PC library, and making sure your PC is on when you want to use the C300.

One thing you should keep in mind if you want to get this unit up and running on your wireless network is that you'll initially have to plug it into a 10/100 Ethernet port to get the wireless settings pre-configured. If you have wireless encryption on your wireless network, you'll definitely need to use a wired connection first. If you have your WEP key information handy, it should be pretty quick to set up.

Our review unit was still using beta software, so the final shipping version may be slightly different. The C300 is compatible with Windows 2000 and XP only.

Continued on page 58

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Taming your image sprawl

By Enno Tonnend

So you've had your scanner and digital camera for some time now, and you've been using them for everything from product photos to shots of family outings. Maybe you store your images offline, on CD, or on removable hard disks. Maybe your hard disk is so massive you can just throw all your snapshots onto it and never worry about running out of room.

Either way, you're in a bind. You have to put a client's brochure together in the next two hours and you're desperately trying to find the photos you took of their offices—and all you're coming up are pictures of Cicie. Feel in his pocket because at last year's barbecue.

Maybe I'm exaggerating a little, but I'd bet I'm not far off the mark. Believe me, I've been there.

Between publishing an animation magazine, writing for dozens of publications, and just being an inveterate shut-

Photo management software

 <p>ACDSee 3.0 From: ACD Systems, www.acdsystems.com For: Windows 9x/NT/2000/XP SP2/300/XP Estimated street price: \$29</p>	 <p>Photoshop Album 1.0 From: Adobe Systems, www.adobe.com For: Windows 9x/NT/2000/XP Estimated street price: \$79</p>	 <p>Paint Shop Photo Album 4 From: Jasc Software, www.jasc.com For: Windows 9x/NT/2000/XP Estimated street price: \$29</p>	 <p>Photo Explorer 8 From: Ultrad Systems, www.ultrad.com For: Windows 9x/NT/2000/XP Price: Free (with Ultrad DVD Picture Show), US\$29.95 (download)</p>
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terday, I'm an old hand at managing staggering amounts of graphics and video clips.

After the third or fourth time I found myself trying to divine the nature of a file named "DSCF0051.JPG" while re-

log to a desktop, I realized I needed help—and if a computer got me into

Continued on page 43

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Turning your image speed

Continued from page 46.

I was looking for the ability to create an exclusionary filter—say, a way to find files tagged with the “Animation” keyword but not “Disney.”

Working with offline files, *Anyplace* which experienced a system meltdown understands the wisdom of keeping media files archived on CD or some other removable media. Unfortunately, adding that layer of safety comes at a layer of inconvenience, and can make finding specific images a chore as you insert one disc after another while searching. Never fear: all of these programs can scan a CD for images and create thumbnails for later reference.

Photoshop Album is the most transparent of the group, making the images as it would insert any other drive and creating thumbnails. Once you’ve copied the disc, the only clue that you’re looking at offline files is the full file and path information in the type over on the right side of the screen. If you try to open the picture in an image editor, *Photoshop Album* will alert you that you’re working with a low-resolution proxy and offer to let you load the file from your CD.

The other programs aggregate offline images from the rest of the directory tree in some way. *Photo Explorer* has an extra icon above My Computer called CD Catalog, which stores the CD’s directory structure (though it should be noted that it doesn’t create thumbnails unless explicitly requested). *ACDSee* manages all its offline images through the Photo Disc pane. *Paint Shop Photo Album* is the least friendly, as the only way to get to offline images is to perform a search using the Removable Media parameter.

Batch file conversion

If you’re planning to use several images for a project—even if it’s only sending them to relatives—there’s a good chance you’ll want to convert the images to a single format or resize them to fit within certain dimensions.

Paint Shop Photo Album’s abilities in this area are so slight as to be nonexistent: at best, you can change images to grayscale or sepia tone, or resize them to within a set maximum length and width. *Photoshop Album* keeps things sim-

Continued on page 50

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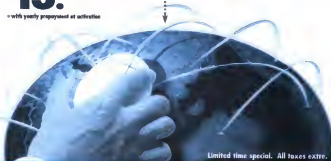
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Tuning your image speed

Continued from page 46

ple but still useful. There are four possible output formats (JPEG, PNG, TIFF, and Photoshop's native file format), a quality setting with 13 levels, and an optional maximum image size. The latter option is smart or dumb depending on your point of view; if an image is taller than it is wide, Photoshop Album automatically converts the specified dimension limits. That means that a limit of 350x340 pixels would become 240x350 under those circumstances.

ACDSee separates batch resizing and conversion into two separate functions, and both have more options than Photoshop Album. Batch resizing allows for reducing or enlarging by a set percentage, or constraining the maximum width and height independently, while batch conversion has a dozen output formats, each with its own compression settings.

Photo Explorer is the most full-featured of the four, offering 29 output formats and options for colour depth, resolution, dots per inch, automatic cropping, and automatic sequential file numbering with set prefixes and/or suffixes—all from one clear and easy-to-understand dialogue box.

If I had to pick just one program to use of the four, I'd be in a bit of a bind. The simple fact is that each one does something better than the others, and they all do their job well. If anything, there's one I like a little less, Josh's Print Shop Photo Album, for making search-through offline media more difficult than it needs to be. But no matter which one you pick, you're taking a large step toward tuning your media chain. □

Erin Townsend (erintown@compuserve.com) reviews when her graphics end up in one of our 144 MB disks.

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NVIDIA GeForce FX 5800 Ultra

Key Features

NVIDIA GeForce FX 5800 GPU with AGPEX Support, CineFX™ Engine vertex shader 2.0+
 PIXEL SHADERS 2.0+
 Intel® Sample™ technology
 nView™ multi-display technology
 WinFast Twin-Turbo-II Cooling System
 WinFast II Software Utility
 MyVIVO features MP (picture in picture), DeInterlace, Capture format: MPEG1/MPG2/MPG4

Product Specification

Hardware Features :

NVIDIA GeForce FX 5800 GPU with AGPEX Support
 CineFX™ Engine & Intel® Sample™ technology
 nView™ multi-display technology
 Digital Kernal Control (DKC)
 Unified Driver Architecture (UDA)
 6.11 Micron Process Technology
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< WIRELESS >

GI What happened to next-gen wireless
 Continued from page 14
 ogy into its new notebooks.

The new 802.11g line from Linksys (www.linksys.com), Windows-G, has already made its way into major retail chains across Canada. And though they weren't popping up in retail listings at the time of writing, other wireless networking companies have products in the pipeline: keep your eyes out for products from D-Link, Netgear, Belkin, SMC, and more.

Of course, the danger of buying a product that is based on a standard that isn't ratified yet is that the standard could officially change. One of the companies that hasn't officially announced 802.11g products yet is 3Com.

"We're worried the standard isn't quite baked yet, and that there may be more changes," says David Morelli, 3Com Canada's communications manager, claiming that 3Com will announce products once the standard is ratified and ready to go. "We want the customers to be confident that the product they're getting works with the ratified standard. We would rather be safe than sorry."

That doesn't mean that currently available 802.11g products won't work at all: we've actually tried out a Linksys 802.11g product, and it seemed to work perfectly well, even with our 802.11b network. The big problem will be compatibility with 802.11g products that might be released after any changes to the 802.11g standard (if any).

Unfortunately, if there are any hardware changes required for the final 802.11g spec, you'll have to buy the hardware again to be fully compliant. Still, Linksys feels fairly comfortable that the IEEE will ratify a version of 802.11g that's fairly similar to the draft version forced on currently shipping Linksys products, around June. "If there are any changes to the spec, Linksys will provide a firmware upgrade on the Web site," emphasizes Kemer Sokol, manager of corporate communications.

As for Centrino, Intel hasn't ruled out 802.11g for a future version of the product, according to company officials at the launch of the product. While there are definite plans to release a version with dual-ant capability, Intel is watching the 802.11g standard evolve fully. □



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Variety, Best Price, TOMKEN Offers (Dealers Only)

WorldCom adds Webcasting to its IP offerings

By Christine Walinski

WorldCom Canada Inc. (www.worldcom.ca) one of Canada's largest IP providers, has added Webcasting to its range of services it offers for mid- to large-sized businesses.

Sam Mazzotta, director of products for WorldCom in Toronto, says WorldCom Event Webcasting uses the company's extensive network and communications infrastructure for Web-based broadcasts,

such as video-based team meetings or company announcements.

"There are a lot of others out there offering something similar, but they [do it] because they have to or want the pipe to do it," Mazzotta said. "We have the pipe and the network and the bandwidth to offer our customers a truly high quality solution."

Unlike most Webcast offerings, companies using WorldCom Event Webcasting do not need to have video on conferencing technology on hand. WorldCom will also

shoot any video necessary and add whatever interactive features the company desires to its broadcast.

All that is required of the user is a standard Internet connection and a Microsoft Media Player to access the video. WorldCom can also add slideshows, user registration, real-time question and answer sessions, and it will archive the video for later viewing.

"This is not meant to replace traditional meetings or one-on-one consultations," Mazzotta said. "But there are situations

and events that such a solution is very well suited to."

Such events could include national or international sales meetings, webgroup conferences for remote team members and company training.

According to Mazzotta, the biggest advantage of Webcasting is the money saved by eliminating the need to transport and accommodate large numbers of people in one meeting place.

—CanadaComputers.com

Reality check: Inexpensive customer

Continued from page 54

business assumptions, such as apparent time saved per day with wireless email multiplied by the average hourly rate per employee."

Some smaller companies may try to achieve ROI by implementing a wireless network in place of their wired network. But Jeremy Depew, an analyst with the Yankee Group, says the business benefit

of wireless technologies does not necessarily come from the potential elimination of some elements of the wired network infrastructure.

"Mobility and flexibility are the biggest drivers," he says, explaining that many companies who look at wireless solutions do so because they have an outdoor workforce that needs to be connected within a corporate campus environment or when making sales calls

in clients. They generally do not implement wireless solutions to save money on cabling.

He also admits that cost has slowed the adoption of this technology in the past, although it is becoming less of a concern as prices drop and businesses recognize the benefit of offering wireless access to their workforce. "Cost and security seem to be the biggest inhibitors," observes Depew. "Security

has to be part of the product [and when it is] we will see it disappear as a barrier."

In some home and small business wireless network installations, there is little or no security implemented on the network, so anyone who comes within wireless access range of your network can have instant access to it.

According to Yogesh Gupta, chief
Continued on page 58

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< NEW & NOTABLE >

WHAT'S NEW

Continued from page 32

says is the world's first product featuring an active-matrix organic light emitting diode (OLED) display.

The **Kodak EasyShare LS643** features a 2.2-inch screen that the company says offers viewing angles of up to 185 degrees. OLED displays require no backlighting and offer clearer images, higher contrast, and faster response times than LCD screens, according to Kodak.

But if you're planning to pick this up for your next vacation, you may have to get it en route—the camera launches in Europe, Asia, and Australia this month at a list price of about US\$250, but there is no word on when we might see one closer to home.

Ever wonder why movie spies never seem to run out of film or space on their storage cards? Maybe they've been holding out on the rest of us. **Lenar Media** (www.lenarmedia.com) has announced the release of two new CompactFlash cards with capacities of 2 GB and 4 GB and a 32X speed rating, which means they can read and write at a rate of 4.8 MBps, according to the company.



Lenar is betting the cards will catch the attention of professional digital photographers who like to take lots of pictures in large formats like TIFF and RAW. The cards are also equipped with iWrite Acceleration technology, which Lenar says further boosts the speed when used with cameras equipped to take advantage of it, such as the Kodak S4n and other Kodak Professional Cameras, and the Nikon E5s, E6n, and D100 models.

The 2 GB card is Type I and is expected to retail for US\$49.99. The 4 GB card will

be Type II and is expected to ship this spring for US\$149.99.

Please note: the company has not actually identified any collaboration with James Bond, Sydney Briston, Austin Powers, or their employers.

Stuck at home while all your family and friends go on a vacation? Then you'll be thrilled to learn how easy it has become for all of them to share their snapshots with you. Instead, the moment they get back, if not before, **Hewlett-Packard's** (www.hp.com) newest cameras, the **PhotoSmart 936** and **736**, come with the new, improved version of Instant Share, which the company introduced last year. The application lets users decide where they want the photo sent from the Instant Share menu on the camera; when the camera is connected to the PC, the images are then sent automatically.

The PhotoSmart 936 is a 5.1-megapixel camera with 3X optical zoom, 3X digital zoom, and an included 32 MB SD card. Its estimated retail price is \$699.99. The 735 is a 3.2-megapixel model with 3X optical and 4X digital zoom. It has 16 MB internal memory and an SD memory card slot. It's expected to be available in June for an estimated price of \$449.99.

Both cameras are compatible with the HP PhotoSmart 8866 camera dock, which will connect to the PC and recharge the camera's batteries. It will also allow users to show off their photos on a TV with a wireless remote, in case you missed seeing them in your inbox.

If your work forces you to wear hard-hats, protective clothing, or steel-toed boots, it's probably safe to assume that many notebook or tablet computers wouldn't be up to the hard knocks of daily life. But **Panasonic Computer Solutions Company** (www.panasonic.com/usbbook) offers what might be the exception: a ruggedized portable computer the company calls the **Toughbook CF-10**. The 2-1/2 (4.4 lb.) convertible notebook/palm tablet PC comes in two models—an XP TabletPC Edition version, and a Touchscreen PC version based on either Windows XP Professional or XP Professional.

The CF-10 features a 20.4-inch WGA display panel that flips and closes over the unit's keyboard to function in the tablet format. The case is cast magnesium alloy

and designed to resist the penetration of liquid and dust, according to the company. The screen and the hard drive have been shock-mounted for protection as well.

The computer offers convenient access to WAN, LAN, and GPS networks, and the company says the lithium-ion battery will last 7.5 hours.

PDF has become the format of choice for sharing documents, but until recently, the only way to generate PDF files was with Adobe Acrobat Distiller, which was too expensive for some users. There are now a few other options, the latest of which is **RedSoft 2.0**, a 1544 application from **alltop** (www.alltop.com/product/redsoft/).

RedSoftPDF behaves like a printer, so PDF files are created by choosing File, Print, and then selecting "RedSoftPDF Generator" from the list of printers. The program allows users to choose the document's permissions (whether or not recipients are allowed to copy, change, or print the document) and use encryption. The resulting file can be viewed with Adobe's free Acrobat Reader software.

The software is Windows-compatible only. A free trial version is available from the company's Web site.

A mobile phone that is only a phone is, apparently, so last year. **Sony Ericsson** (www.sonyericsson.com) has unveiled its new line, and the fact that these devices can be used for phone calls seems almost incidental.



The **T210** is for gamers, with force feedback built into the handset, 32-tone polyphonic sound, and a five-way navigation joystick. It will be compatible with

approximately 40 games, according to the company. With the addition of an MCA-25 camera, the T310 can also be used as a digital camera.

The T610 has a built-in camera, and users can send their pictures out via Bluetooth, cable, MMS, or email, using DeckShare technology. It also includes proprietary sound, a joystick, and Java support for playing games, either alone or with an opponent using Bluetooth. In addition, users can piece together their own ring tones with the Melody Composer.

The P800 has a colour touch-screen with stylus and a built-in camera that will allow the user to take and store pictures and create and send multimedia picture messages. It comes with games, a video clip viewer, and a built-in multi-format digital stereo audio player to download, save and play music. A 32MB Memory Stick DUO is included for storage. Supported audio formats include MP3, WMA, AMR, and AU.

For those who scramble when their phone rings to switch off their portable music player to answer, the H8N-30,



which will be available in the second half of the year, may make things easier. Its digital audio player attachment that connects to any Bluetooth-enabled phone and can be used as a hands-free device. When a call comes in, the music is automatically muted, the display shows the name of the caller, and the user can choose whether to talk or take the call.

When it comes to notebook computers, "new and improved" often means "thinner and lighter," and IBM's (www.ibm.ca/ibm) newly redesigned T40, X31, and R40 notebooks hold to that pattern. The T40, for example, is advertised at almost a half-pound lighter and 30 percent thinner. But, according to the company, that's just the beginning of the upgrades to its notebook line.

Select models of the T40, X31, and R40 notebooks feature the new Intel Pentium-M processor, and some offer Intel's recent

launched Centrino technology for wireless connectivity. IBM also offers a proprietary feature called the IBM Embedded Security Subsystem, a hardware/software combination that automates user identities and helps protect data, filed with encryption, the company says. The system provides the most secure wireless environment in the industry.



Another feature of the new line is called RapidRestore PC, which IBM says provides one-button disaster recovery that can restore previously saved data, settings, and applications after a software failure.

Prices for the ThinkPad T40 notebook start at US\$2,999, while prices for the entry-level ThinkPad X310 start at US\$1,499. The ThinkPad X31, an ultraportable model, starts at US\$1,349.

Palm OS users can now make sure their flight is leaving on time at the Air Canada Domestic Maple Leaf lounge at Pearson International Airport in Toronto.

A Bets & Fly station was unveiled in March by Palm Canada (www.palm.ca) and Air Canada (www.aircanada.com), so those leaving Toronto can get daily news updates, flight times and promotions, airport maps, and guides for major Canadian cities. The kiosks are expected to become standard in all 25 of the airline's Maple Leaf lounges in airports across Canada.

Flight schedules can be searched using the airport name and/or date. News updates will be provided by Cyberspace and the Globe & Mail. Airport maps include Toronto, Denver (Hearts), Vancouver and Calgary. Enroute destination guides by Dorco currently include Toronto, Vancouver, Calgary, Edmonton and Montreal, with more cities to follow.

Palm users can download the necessary portal software, in English or French, by pointing their Palm OS-based handheld at the kiosk, which uses Bluetooth Wireless technology to transfer data via the infrared port on a user's PDA.

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your settings for converting Word documents. And, strangely enough, Driller was the only program of all the ones I tried that incorrectly caused a line to appear over a graphic that was supposed to be obscuring it.

Using *low PDF Creator* is like taking generic acetaminophen instead of Tylenol. It's a bit cheaper and people may not recognize the brand, but it performs almost exactly like the original.

In all of my tests, *low PDF Creator* generated PDFs that were almost identical in appearance to those created by Adobe's Driller or PDFMaker—and the differences that did exist were so subtle most people wouldn't notice. As a bonus, *low PDF Creator* generally generated smaller files than Acrobat. (A 134 KB Word file weighed in as a 113 KB PDF, Adobe's PDFMaker generated a 141 KB PDF from the same file.)

PDFs are created either through a printer driver or *low ToPDF*, a Driller-like application that allows you to drag and drop PostScript files to generate PDFs. *low ToPDF* is also where you create output pages.

Like Adobe PDFMaker for Word, *low PDF Creator* includes a one-click tool-

bar button for creating bookmarks, notes, and hyperlinks based on a Word document's structure. Other than an inability to create bookmarks from anything other than Word's heading styles, the macro is very similar to PDFMaker—it even aptly lacks of precision. On the plus side, *low PDF Creator* can generate hyperlinks from URLs in text without having to convert that each URL is also hyperlinked in Word—a feature I'd have expected Adobe to have added to PDFMaker a long time ago.

low PDF Creator is probably the most complete PDF tool short of Acrobat itself. Beyond converting Word documents, it includes options for file Web viewing, encryption and security, and a handful of colour management and prepress functions. Although it's not quite as thorough as Driller, it provides plenty of room to grow for the user who's just starting to explore PDF.

PDF-XChange 2.5

Cost: \$49.95 (includes 90-day trial; after that, only four US\$20.00/downloads, until availability expires late this year)

PDF-XChange exists only as a printer

driver, all of its parameters are set from the driver's setup options through the Control Panel or an application's Print dialog box. Its pared-down aesthetic positions PDF-XChange strictly for onscreen or printer use; you'll find no options for colour management, for instance. You also won't find any Word-specific functions, like bookmarks or hyperlinks—though it will find URLs when you're printing from any text file and create links from them.



For all that it lacks, you will find one function that's absent from Driller or *low PDF Creator*: a fairly extensive watermark editor. This is a deceptively powerful feature as its built into the driver; you can create watermarks regardless of the pro-

gram used to create a document.

PDFs made with this program were generally even smaller than those generated from *low PDF Creator*; the 134 KB test file I mentioned earlier became a 114 KB PDF, and looked identical to the other two.

PDF-XChange's only significant flaw is a big one: certain documents erroneously caused PDF-XChange to crash, rendering the driver unusable until I rebooted.

Make PDF for Word 4.0

Cost: \$49.95 (includes 90-day trial; after that, only four US\$20.00/downloads)

For Windows (Word 97 and higher)
Price: US\$35 (download)

MakePDF for Word is even sparer than PDF-XChange; it appears as a button on the Word toolbar and as an option in Word's File menu, with only the most general options for embedding fonts and image compression. Security and bookmark functions are a little more fleshed out (and at least you can select other Word styles for bookmarks), and the watermark function is at least as powerful.

Continued on page 70

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Automating Word text entry



Having to type the same piece of text repeatedly can be very frustrating. For example, you have to include a disclaimer in every document you generate for your small business. Typing it in

from scratch every time is not only a poor use of your time, you risk making mistakes—at the very least, you'll have to proofread it each time.

An alternative is to type the information once and use the tools available in Word to create it automatically when you need it in the future. We'll look at some of those tools you can use to insert text, graphics, and even entire files, in a variety of situations.

The ins and outs of AutoCorrect



AutoCorrect automatically replaces a keyword or series of characters with text you specify.

AutoCorrect is a simple tool that is most commonly used to correct spelling errors. When you spellcheck a document and locate a misspelled word, you can click on the correct spelling, then AutoCorrect, and that same spelling will automatically be corrected in the same way in future.

AutoCorrect can also be used to automatically insert smaller pieces of text. To do this, tell AutoCorrect the text you'll be typing in (the "Error") and what text should replace it (the "Correction").

To set this up, choose Tools, AutoCorrect Options (in earlier versions of Word, choose Tools, then AutoCorrect), and click the AutoCorrect tab. You'll type the text that you want to

replace (or correct) in the Replace box and the text you want to replace it with in the With box.

For example, to replace TBN with The Daily News, we used type TBN in the Replace box and The Daily News in the With box, click Add, then OK. When you done this, type TBN in a document and notice that, as soon as you press the space bar, the change is made.

If you find that AutoCorrect is not working, click on make sure you're using the right Replace text, and that the case of what you are typing is correct. AutoCorrect is highly case sensitive and TBN is treated very differently than tbn or Tbn. If all appears to be correct, check that AutoCorrect is enabled. To do this, choose Tools, AutoCorrect Options (or Tools, AutoCorrect) and enable the Replace text as you type checkbox.

There are a couple of problems with our scenario of replacing TBN with The Daily News. One is that every time we type TBN, the change will be made even if we occasionally usually want to use the acronym. Secondly, the text must be typed in capitals for it to work. When you create AutoCorrect entries, consider using lower case, as this may be easier to type, and also consider adding a character before the Replace text that makes it unique. For example if you use Tbn as the Replace text not only is it lower case, but it is also very unlikely that you would ever use this in a Word document. Approached this way, you can type TBN when you want to use the acronym and Tbn when you want the full name.

Note that AutoCorrect can only store a maximum of 255 characters in plain text format, so it can only hold for a few lines of plain text (a typical line of text is around 80 characters). If on the other hand, you want to store text with for formatting, it can store much larger amounts of text. This sort of plain text is limited to 255 characters but a lot more formatted text can be stored.

No matter how careful you have been when choosing the replace text, there will come a time when a replacement is made that you don't want. You can undo it by immediately choosing Edit, then Undo to override the replacement and restore the original text. If you are using Word 2002, a Smart Tag will appear

where you've made a replacement. You can click on it at any point, even hours later, to open the Smart Tag options and select the Change Tag to option to undo the replacement.

Harness the power of AutoText



By assigning entries to a style, you can create your own AutoText items categories.

AutoText is more powerful than AutoCorrect in a few ways. It can be used to insert images as well as text. As well, it doesn't replace text automatically (you have to select it) so you have better control over its behaviour.

Create an entry in AutoText much like you do in AutoCorrect: allocate a key word or series of characters (called a name) to represent the text. Unlike AutoCorrect, though, you have to type in the keyword and press F3 for the replacement to occur. It's not automatic.

If the AutoText name is four characters (or more), you'll see a Screen Tip appear as soon as you have typed enough of it for Word to identify the keyword. Press Enter in the Screen Tip to insert the AutoText entry. You can also access AutoText entries by choosing Insert, AutoText, then AutoText again, and typing in a keyword or selecting one from the list.

To create an AutoText entry, type the entry (or insert the image) in your document. Select the text (or image), and choose Insert, AutoText, and Now, then type a name for the entry and click OK. The entry is stored in your Normal.dot file so it's available in all documents based on this template.

You'll find AutoText is a useful way to add images (like a company logo), and for signatures (scan them into the computer and save as image files) to files

and letters. When you create a lot of AutoText entries it can be confusing to remember which entry contains what data. To help you remember, create a list of AutoText entries by choosing File, Print from the Print What dropdown list, choose AutoText entries and click OK. You can keep this document as a handy reference.

Adding a new AutoText category

By default, all new AutoText entries are added to the Normal category of the AutoText entries. However, there are other categories in the list, and you can create your own. To do this, type the text for your AutoText entry, select it and, in the Style list on the Formatting toolbar, type the name you want to add your new category (e.g. Personal Entries)—which will be the case this entry will be assigned to. Now, with the text still selected, choose Insert, AutoText, New, type in a name for the new entry, and click OK. You can repeat this process—of typing your text, setting it to the style of the same name as the category to add it to, then adding the entry as an AutoText entry—as many times as you like. You can also add more entries at any time.

When you're done, it is time to test them. Open a new document and choose Insert, then AutoText. Your new category (with the same name as the style name) will appear in the menu. Click on it, then select the entry you want to use.

Word's INCLUDETEXT field

In some instances you'll need to add more than a few words. For example, you may want to insert the contents of an entire file. Do this using the Word INCLUDETEXT field.

To do this, choose Insert, Field, select INCLUDETEXT from the list, and click the Field Codes button. In the box to the right of the word INCLUDETEXT, type the name of the file you want to include. Type a double backslash character for every backslash in the file name and path and include the entire filename in quotes for example:

INCLUDETEXT "C:\my documents\mydocument.doc"

When you click OK, the contents of the file will appear in position in your document. To avoid typing in the file code every time, select and copy a (press Alt + F9 to view the code) and add it as an AutoText entry. You can then insert

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Automating Word text entry

Clipboard Auto page 64
the file appears in the future by simply typing the AutoText entry's name and pressing F3.

Special AutoText entries

There are two special purpose AutoText entries that are worth memorizing: `Envelope@trial` and `Envelope@trial2`. They are automatically added by Word to all new envelopes you create. You can use these entries to add images (your company logo) and a return address to

your envelopes.

To see how they work, create a new blank document and add an envelope to it using Tools, Letters and Mailings, Envelopes and Labels, Envelope tab, and Add To Document. Now add your company logo (or another image) to the envelope and your return address (add this inside a text box so you control where it appears on the envelope). Make sure the wrapping for your image is set to something other than Inline with text.

When the items are properly positioned on the envelope, click on the

image to select it, and create it as a new AutoText entry calling it `Envelope@trial`. Repeat the process, this time selecting the text box, and create it as `Envelope@trial2`.

When you're done, close the document—there is no need to save it. However, you should make sure you answer Yes if you are prompted to save changes made to Normal dot as these changes include the creation of the two AutoText entries.

Test the result by creating a new envelope for a document. Notice that the

image (or logo) and your text box appear automatically in place on the envelope. If, for some reason, you don't want to use them on a particular document, click the image (or the text box) to select it and click Delete to remove it.

As you can see, Word has a number of tools that help you insert frequently used text and image documents without having to do it from scratch each time. *Cliff Hixler* teaches in writing hands-on tutorials. His columns appear regularly in a number of publications in Australia, Canada, the U.K. and U.S. Contact Hixler at hixler@hixlertutorials.com.

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Mr. Forklift moves forward

TCP/Microsoft
small business
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says productivity
goals in sight

by David Iles

A lot has changed since Mr. Forklift (www.forklift.com) won The Computer Paper Microsoft Small Business Makeover contest. The small company sells, services, and rents new and used forklift equipment, ergonomic equipment, and offers custom material-handling fabrication and design services to major customers across the Greater Toronto Area.

Before the makeover, Mr. Forklift's general manager, Adam Columbian, said



Mr. Forklift's
Adam Columbian
at work.

he spent less time on his core business, and more time struggling with the technology that was supposed to support it. While he hasn't yet realized all of his productivity goals, he says his rate of IT

troubleshooting time is doing Mr. Forklift business has improved, and is heading in the right direction.

"I can't relate anything to real increased productivity, but my time managing the entire network has decreased dramatically, freeing up time more time for me to manage the business—which is far more productive than fighting with computer problems."

Columbian says he is still working with Kevin Hunter of Microsoft (www.microsoft.com/canada/smallbiz) to increase the company's productivity, and he's optimistic about reaching his goals now that he can focus on forklifts.

Securing in small business presents a lot of unique challenges, and winning the business makeover contest did ease some of the pressures of growing a small business as the information age. Mr. Forklift offers on-call, around-the-clock service, 365 days a year, so stable information and networking technology is vital to its administrative, sales, service, and support functions.

The new server that came with the makeover not only had to support new and existing internal computing workstations, it had to network with clients and suppliers outside the company's Concord, Ont., office, and support its existing computer software.

After the installation, Mr. Forklift was able to bring in additional companies and staff. They have committed to the server, adding workstations that could not have been supported with the previ-

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son setup. The installation went smoothly, reducing the computer-related problems Mr. Forthick had been encountering, and freeing up existing staff to work on improved productivity. The large server unit is now easily tucked away, quietly humming behind a desk in one of the small offices at Mr. Forthick's. "My office space was very tight to begin with. I have three sales staff squeezed into one office," says Columbus.

The main challenge for Mr. Forthick's staff involved learning how the new system and software worked. There were very few installation issues, just a couple minor hardware snags at the beginning, which were easily resolved.

"Gena did help a lot at first, but a lot of it was by learning as we went along," says Columbus, referring to Microsoft Solutions Provider, GENIX Solutions (www.genix.com). "Gena spent perhaps 100 hours setting it up and implementing it. Stan Chien especially has been very helpful," he says.

"Their support has been good, and they are able to log in remotely and fix many issues without having to come here, which has been very convenient for

us, and I'm sure for them, too. There are a multitude of issues that need to be managed [email, system anti-virus, exchange, and more] and it can get overwhelming at the server level. So I have them do a lot of it."

Columbus points out that small companies that are thinking of upgrading their systems shouldn't wait until the last minute. It is not uncommon for small business owners to put off computer and networking upgrades until a crisis pro-

voke the need for an immediate upgrade. Budgets are often tight, and it can be a challenge to integrate a large upgrade into a busy schedule.

Columbus suggests that small business owners integrate their upgrade schedule with their business plans. He points out that advance planning can help speed up the integration process, and will actually save money in the long run.

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Makeover hardware and software

The primary server hardware in Mr. Forthick's small business makeover is a Compaq Proven ML130 Generation 2 Server, produced by a 1.3 GHz Intel Pentium 3 processor with 512 MB RAM, two 38.2 GB hot-pluggable mirrored drives, and protected by an APC SmartUPS 700 NET uninterruptible power supply.

The virtual private network (VPN) was implemented with a Nortel Contivity 120. All of the equipment is running on Microsoft's Windows Small Business Server 2000. Applications included in the server software suite are Microsoft Windows 2000 Server, Microsoft Exchange 2000 Server, Microsoft SQL Server 2000, Microsoft Internet Security and Acceleration Server 2000.

On the server, Microsoft Certified Partner, GENIX Solutions, installed Microsoft Small Business Server 2000, Windows 2000, and Exchange 2000. On the existing PC workstations, the company installed Microsoft Office XP with Outlook XP.

—Evelyn Joanne

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Virtual OSes ease software compatibility issues

By Emma Townsend

The classic problem faced when switching to the Macintosh—for that matter, to any “alternative” platform—had been the issue of working with existing data. The glib comment from the Windows camp has always been “We have a lot more software,” and the equally glib response from the Macintosh diehards has long been “File formats are cross-platform, and many popular Windows programs are available on the Macintosh.”

The Macintosh resort is certainly true, but it makes up only part of the whole picture.

Let's start with the first piece of the puzzle: the software. Many major applications are available for both Windows and Mac OS, including Microsoft Office, Internet Explorer, Netscape, Quicken, and, of course, just about the entire Adobe and Macromedia lines. That's the good news. The bad news is that you will effectively have to double your software investment by buying Mac versions of software you already own. And while software makers happily give existing users a break when upgrading to new versions, that doesn't work cross-platform representatives from Adobe, Microsoft, and Macromedia all confirmed that you can't use a Windows license to "upgrade" to the Mac version of the same software.

"The real challenge is being able to use familiar applications on a new platform exactly the way you did on the old one—right down to all the little customizations you've refined over time."

My name is Emru
Townsend,
and I'm a Switcher



In some cases you might back out. There are some programs, like Adobe's Photoshop Elements, that have Windows and Macintosh versions in the same package. However, there are few and far between.

Wonders in a window

Another option is Connectix's (www.connectix.com) venerable Virtual PC for Mac.

now at version 6. As its name suggests, Virtual PC allows you to run Windows software on a Macintosh by emulating a Windows machine in a window. The package comes with your choice of Windows OSes, from Windows 98 through to XP Professional, so you can work with what's best for you.

Virtual PC is remarkably transparent. The Windows window (search) makes use

of your CD-ROM, USB ports, printer, and even Ethernet and AirPort connections. It should be noted that Virtual PC works with whatever network connection happens to be functioning on the Mac, treating it as an Ethernet connection. So even if you're using an AirPort (IEEE 802.11b) adapter, the virtual Windows machine sees it as an Ethernet connection, which makes sharing files over the air tricky, if not impossible. (I'm still investigating; an update will appear in a future column.)

If I ran every program I could think to install on it, though I didn't try any games. My only complaint was that Windows was a bit sluggish on my flick. Granted, I had only devoted 128 MB of RAM (half the flick's) to it, something I wouldn't recommend for Windows XP under any circumstances.

Virtual PC 6 is available for Mac OS 9.2.2, 10.1.5, 10.2.1 (and higher), and ranges in price from about \$299 to \$359 (depends on the included Windows OS).

Microsoft® makes it easy to

If you decide to keep your Mac pure and don't mind spending the extra money on Mac versions of your software, you're still faced with the task of transferring your files and data. As mentioned earlier, file formats are indeed cross-platform, and getting files from a PC to a Mac or vice versa is easy; that's what our

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ADVANCED COMPUTER

[illegible]

Third-party RAM boost for new PowerBooks



April and May are slow months for Apple and indeed for most computer companies, leading up to the summer months and the back-to-school PC market. We don't

expect to see many new products from Apple in the next few months, although it will be holding a World Wide Developers Conference in June, where the next version of Mac OS X will debut.

In the meantime, here's something to reflect on: OS X kicked two on March 24. Since it's release, Apple has not only managed to move all new software development exclusively to the new OS, but effective Jan. 1, it has actually stopped making new machines that boot into Mac OS 9. Two years ago, there was some doubt that OS X would ever be as popular as the "dink" Mac OS, and

RIP CRT?



some even speculated that it might kill Apple once and for all.

In retrospect, it looks like OS X has actually helped Apple to grow its market share and attract a lot more Windows users than in the past. Within the next year, we should see the release of Mac OS X 10.3—called Panther—and possibly the very first 64-bit PowerMac. Looking ahead to be sure.

1 GB SDRAM for new PowerBooks

One of our biggest gripes with the new 12-inch PowerBook was its limited RAM capacity. Since it's one of the new generation of Macs that will only run OS X, we figure it should be able to run it well. OS X requires a significant amount of RAM to operate at a reasonable speed, and the limit on the 12-inch PowerBook just seems too low at 640 MB.

For many average home or office tasks 256 MB is acceptable, but 256 MB to 512 MB is just about perfect. For high end audio, video, or graphics software though, OS X really demands more than

512 MB, and 1 GB is preferable.

Making a professional G4-based machine with a hint of 640 MB seems short-sighted, and the fact that it's the same limit as the iBook G3 makes it seem like Apple is just recycling parts from the consumer line.



At least one company, DSP Memory Distribution, Go2H (www.dsp-memory.com), Web site is in German, but can be partially translated using the Babelfish Web site translator at babelfish.altavista.com, however, has found a workaround to this problem. Since the new PowerBooks use DDR memory, it appears they no longer have a problem recognizing chips larger than 512 MB, and a German company has announced the

first 1 GB DDR 2100 and 2700 SDRAMs.

This brings the RAM limit on the 12-inch PowerBooks to 1 GB and 2 GB for the 17-inch model. There are more considerable memory alterations for professional machines and they put the PowerBooks in line with most desktops in terms of RAM expansion.

The downside? These new chips do not come cheap. Currently, a 1 GB DDR 2700 chip sells for about US\$600 and they are not yet available in North America. It's possible that prices will drop, but it could be a year before they're really worth much.

Nonetheless, it's good to know a memory boost is possible for the smallest PowerBook, making it a more viable pro model in our opinion. Now, if only they could add a Level-3 cache to the next revision.

Wily new uses for a Bluetooth phone

Bluetooth for the Mac got a big boost when it became a part of the standard OS 10.2 install, and again in OS 9.2.4.

Configurations start at \$1,549.

Considering that the iMac ring in the Internet age for Apple and it was one of the most iconic designs of computer pop culture it's sad to see it go, but if Apple chief Steve Jobs has shown us anything since his return is that Apple is not going to rest on its laurels. With the original iMac we killed off the floppy drive, and with the death of the G3 iMac, Apple moved one step closer to killing the OS display.

—Justin Sargent

Introduced in 1998, the original CRT iMac G3 is now officially gone from Apple's product lineup. In a quiet, overnight update to its online store, Apple removed the last available iMac configuration from its product grid.

The very first iMac had a 233 MHz G3 processor and the most recent version sported a 700 MHz G3. In a revised case that included a slot-loading CD, DVD, or CD-RW drive. Even though the LCD iMac has been available for more than a year, the iMac G3 continued to be sold as a

budget option through the online Apple Store and dealers. The G4 iMac with 15-inch LCD sells for around \$2,000—which is the same price of the original 233 MHz iMac when it debuted in the summer of 1998. In the last year, new G3 iMacs were available for as little as \$1,349, although they were replaced by using CD-ROM only.

The remaining budget, CRT option is the G3 iMac, in spirit if not in name. It has a similar case, but with a larger 17-inch CRT screen and includes a DVD or CD-RW drive.

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when Apple enhanced the Bluetooth devices to support a larger range of devices and commands. Now that the new PowerBook models are shipping with built-in Bluetooth capability and the PowerMac and i7-inch iMac can be ordered with built-in (Bluetooth), developers are starting to release software that exploits this technology.

Already users who have a Palm Tungsten can sync to Palm Desktop over Bluetooth (although there seem to be a few bugs that need to be ironed out by Palm before it's as reliable as USB syncing). Microsoft has released a Bluetooth Mouse and Keyboard for Windows PCs that won't be Mac compatible until Apple adds Bluetooth input device support to the Mac OS.

In the meantime, the main use for Bluetooth is cell phone connectivity, which is fitting as Bluetooth was created by Ericsson (www.ericsson.com/technology/bluetooth/).

In OS 10.2.4, you can already sync a Bluetooth phone to your Address Book and iCal using sync. You can also send pictures and ring tones to your phone using the Bluetooth File Exchange applica-

tion, and dial calls or send SMS from inside the Address Book by passing the phone to your Mac.

As nice as these features are, it looks like the third-party companies are going to be bringing us the really cool Bluetooth stuff. Already, there are several unique freeware/bshareware utilities for the Mac that will allow to owners of Bluetooth phones. Presently, the only Bluetooth phones available in Canada are the new Sony Ericsson T205 (available from Rogers and Fido) and the older T19 (Ipspace sales, imported from Asia). There will be more Bluetooth-equipped models from Nokia and Motorola available in the next few months, and a cool PDA/phone combo from Sony called the P900. Here's a few Bluetooth software utilities we found that are available now for OS X 10.2 or higher.

Toll Dialer This tiny freeware program allows you to dial your phone from any Cocoa application, such as Safari and Mail. (Cocoa apps are typically designed to run under OS X only, using the newer libraries for application development, as opposed to the

Carbon libraries that allow software to run under either OS 9 or X.) Toll Dialer (www.mactools.com) is similar to the Address Book dialing that Apple built into OS 10.2, but it allows you to dial any plain text number, including text in an email or Web page, which could be handy. Of course a Bluetooth headset in the software is convenient for this application, since you can leave the phone in your pocket and make calls using just the computer.

Sony Ericsson Clicker and Remote These two programs work in a similar way and allow you to control iTunes, PowerPoint, DVD Player, and many other apps on your system. The differences are in the implementation. Remote (www.sonyericsson.com) lets you control only a limited number of applications, while Clicker (homepage.mac.com/stevenj/stevenj/Clicker/) is more flexible, both with parsing with your phone, then adding a menu in the phone's Accessories section. This remote controls commands that are sent to the computer and translated into input by the software. Remote

can control iTunes, DVD Player, Keynote, and PowerPoint. It also allows you to control your mouse by using the T205's joystick. You can also change the global system volume, or mute the computer's sound altogether. Clicker lets you change the list of programs you control, and it can be used with any application that is AppleScriptable—which means the possibilities are limitless. It also includes a proximity feature so you can set notes to happen when you go in or out of range: pausing iTunes when you leave the room and resuming play when you return, for example. Clicker doesn't have a mouse control mode though, but in most cases you won't need that to use your phone as a presentation remote.

iPod impresses power management

When the iPod was released, Apple promised 10 hours of continuous play and days of standby.

This was true with the first 5-Gb models and later with the 10-Gb version. But, by the time Apple got to the 30-Gb model

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good reason.

As is often the case, Linux is loved because of the ease of installing Linux machines are simply less expensive than high end, hardware-specific UNIX variants and the appropriate hardware. When you have to use entire "render farms" (large

collections of interconnected machines sharing the load for high end graphics and effects generation), hardware costs become a factor.

It's a testament to Linux's stability and power that applications requiring hours, days, and even weeks of computer time to

render a completed image with animation are trusted to X's gentle fingers.

If you want to learn more about what's happening in this space, check out the Web sites mentioned throughout this article, as well as the LinuxWorld '04 group (groups.yahoo.com/group/LinuxWorld/),

and the Linux World's section of *News@Star.com* (news.star.com/linuxworld/). □

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Virtual OSes ease software compatibility

Continued from page 21

works and memorable media are fun. (I'll talk about new novels in a future column.) But the real challenge is being able to use familiar applications on a new platform the way you did on the old one—right down, to all the little customizations you've refined over time so you can work as efficiently as possible.

Unfortunately, most software makers don't even make it easy to pass personal settings between copies of their programs on the same platform. So exporting them to make it easy to move settings from Windows to a Mac might be asking a bit much.

The closest thing to an automated solution is *Data Technologies' (www.data.com)* Move2Mac, a program that makes transferring data extremely

painless. It's available for Windows 9x, Me, 2000, and X2 as well as OS X 10.2, and has an estimated price of \$89.

Briefly, this is how it works. First you run the Move2Mac setup program on your Windows computer, and select what you want to transfer to your Mac. Then you run the setup program on the Mac, connect the two computers with Data's special USB cable, and the transfer gets under way.

Move2Mac makes moving data very easy. All you have to do is select the types of files you want to move (text, spreadsheets, etc.), and Move2Mac scans your hard disk to find every file with that extension, and transfers it over using the same folder structure—or if you know where to find a file on your PC, you'll know where to find it on the Mac. Files in special directories are transferred to

their Mac equivalent. Windows desktop files move to the Mac desktop. My Documents files move to Documents, and so on.

Aside from data, Move2Mac also transfers Internet Explorer bookmarks, desktop wallpaper, dialog connections, Outlook Express POP3 settings and contacts, and email settings and messages. In practice, it's almost as good as it sounds, but the devil is in the details.

You'll note, for instance, that Move2Mac only moves bookmarks from Internet Explorer. If you're an Outlook Express user, your POP3 settings will be transferred to the Mac's Mail application, and your contacts are incorporated into the Mac's Address Book—but the email messages themselves are untouched. The same is true with iPhoto and other email applications,

with the exception of Netscape Mail.

Move2Mac uses Netscape Mail as sort of a Rosetta stone. First you install Netscape 7 on your PC (it's included on the CD), then import your mail into it. Move2Mac transfers the email data to the Mac, and you can then import your messages into your chosen email program. At least, that's the idea. When I tried a transfer, iPhoto 5.2 refused to import from anything other than Chris Smaker and Outlook Express.

If you're willing to put in a little effort, there are a variety of ways to get your settings from Windows to Mac manually, but that's fodder for next month. □

Chris Smaker (smaker@earthlink.net) has been solving cross-platform transfer problems since 1985, when he led to move to Commodore 64 files to his brand new 286.

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The future of colour on the Web: Using CSS3, Part 1

By Keith Schengli-Roberts

Under the first two Cascading Style Sheets specifications (CSS1 and CSS2), the colour property was rolled into the Color and Background family of properties. This is because, at the time, there was only a single colour property—colour—as it didn't make much sense to put it into its own family. However, the latest drafts of the forthcoming CSS3 specification pass colour into an own family, adding a number of related properties, as well as extending the ways in which you can specify colour values. If and when these properties are implemented in the latest browsers, they will really become the way to set colour to any element in a Web page.

Under the CSS3 colour module, the new colour family consists of four separate properties, all relating to colour as the visibility of an item on a Web page. The new colour family of properties consists of the following properties: color, opacity, color-profile, and color-rendering. There is also a new "at rule" called @color-profile, and the full spectrum of named X-11 colour values—long used informally within the major Web browsers—have now been formally adopted.

Say it with colour

The colour CSS property simply sets the way colour should be displayed for an associated element. The colour property works the same way as the colour attribute does with the <body> tag or a number of other XHTML tags. This property can

take any colour value type that can be associated with CSS.

For example, it can take a standard colour name (such as "blue") or a hexadecimal colour value (such as "#0000FF", which is also blue), both of which should be familiar ways of setting colour for people used to setting it in HTML. CSS also lets you set colour values using four additional colour formats: a compressed hexadecimal colour value (such as "#00F", which again equals "blue"), a numerical triplet: RGB (red, green, blue) colour value (where "rgb(0,0,255)" is blue), and a three-digit RGB percentage colour value (where "rgb(0%,0%,100%)" is blue). These are things you can already do with the colour property, but the draft CSS3 specification goes further, by introducing two new ways of specifying colour values.

One of these new ways lets you specify opacity—how transparent a colour value is—in addition to colour values. This is accomplished using an RGBA colour value. The "A" stands for Alpha, a common industry term for specifying opacity values. This additional alpha value takes a range from 0.0 (fully transparent) to 1.0 (opaque). To specify an RGBA colour value, you specify it explicitly using "rgba" and tack on the alpha value to the end of the RGB statement, as in the following code snippet:

```
<div class="lightBlue">This Blue Header is Half Opaque/Half Transparent</div>
<div class="lightBlue">This Blue Header is Half Opaque/50% Transparent</div>
```

HSL (hue, saturation, and lightness) is

the second way of setting colour in the draft CSS3 specification, which introduces a whole new way of specifying Web colour values. HSL is arguably the most intuitive way to specify a colour value, as it describes it in terms of its placement on a rainbow colour circle, its depth, and then how light or dark it is.

The first value of HSL, as described by a colour circle with colour values arranged on its circumference: 0 (and 360) degrees is red, green is 120 degrees and blue is 240 degrees. Both saturation and lightness are represented by percentage values: 100 percent saturation is the "full" value for a given colour, whereas zero percent represents the greatest value for that colour. Also, 100 percent lightness is white, 50 percent is "normal" and zero percent lightness is black. The following code snippet shows how "half" red, green, and blue values would be represented using HSL.

```
<div class="halfRed">(*red*)</div>
<div class="halfGreen">(*green*)</div>
<div class="halfBlue">(*blue*)</div>
```

Once you know where a value lies on the colour wheel, it is relatively easy to tweak, making it more green or blue for example, de-saturating it, or making it darker or brighter.

Since there is a way to specify transparency with RGB values using RGBA, it only makes sense to do the same with HSL, so the draft CSS3 colour module also introduces HSLA, which works exactly the same way as RGBA. Under this scheme, the following rules would be equivalent, producing a half-transparent blue:

```
<div class="halfBlue">(*blue*)</div>
<div class="halfBlue">(*blue*)</div>
```

Finally, the CSS3 colour module adds a new transparent value to all properties that accept colour. So, by adding this value, you can make a Web object fully transparent, although it is still there. This value could previously be applied to background colour. The new arrangement simplifies things considerably, making it easier to directly—and dynamically—change colour values for Web objects, too.

I can see through you (using opacity)

By default, all objects on a Web page are fully opaque. The opacity property will allow Web authors to change this, setting a value that tells the browser how opaque an object would be, allowing for interesting visual effects. While you can use RGBA or HSLA values to set colour and opacity values for things like text, the opacity property should allow you to do this with other objects, such as images.

Opacity takes a decimal value ranging between 0.0 (fully transparent) and 1.0 (fully opaque)—any value greater or lower than this is clipped to stay within this range. The opacity value is applied across the entire element: any outline, border, or background that may be associated with a selected element is rendered using the same opacity value.

The following sample code shows how it could be used, the result of which would be headers that are increasingly transparent:

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IT career planning: Back to the basics

By Sharlene Myers

Information technology still a good place to hang your career cap? In a hot market, like the much-hyped technology sector of a few years ago, career planning was an easy step to skip in the rush to what were constantly portrayed as glamorous, interesting, well-paid jobs that—with stock options and a little luck—afforded the chance to retire by the age of 35.

While the hiring frenzy of a few years ago will apparently live on only in the food memories of a few placement agents, there are some signs of job recovery in IT-related industries. Anecdotal reports from a panel of tech industry human resources professionals, at a recent World Metrics meeting in Vancouver, were cautiously optimistic, based on an increase in hiring activity in the first two months of this year.

Robert Half Technology (www.rh.com), which surveys chief information officers on a quarterly basis for its IT Hiring Index, reports that CIOs anticipate a nine percent increase in the hiring of IT professionals in the second quarter of



British Columbia Institute of Technology regularly attracts more than 5,000 students to its Internet & Information Science and Program Topics. Some of these interested in the institution's IT-related programs.

this year. Ten percent of CIOs surveyed expected to add to their IT staff in the quarter, while only one percent expected staff cutbacks. Eighty-nine percent anticipated no change to their current hiring activity.

Kraig Docherty, division director for Robert Half Technology in Vancouver,

admits that viewing quarter-by-quarter hiring trends is of limited value to those in the early stages of planning an IT career, but says that, given current economic and political uncertainties, CIOs really are operating on a quarter-by-quarter basis. Predicting further ahead would be impossible, says Docherty.

DIY career planning: Getting a good fit requires research

Career searchers without access to professional career consultants or databases of job descriptions are left with a rather more labour-intensive option: research. Get lists of job descriptions, analyze them to determine the core duties of each job, and then compare them internally with your own pattern of key success factors. Butch uses a 60-40 formula—60 percent of your time is the

job should be spent doing things that you enjoy doing and that you do well.

"In the real world of work every job has its down side—you're not going to find the perfect fit—but if most of the time, you're doing something that correlates with your natural inclinations...you're going to be energized by that job," says Butch. "Yes there are going to be down times—there's a down side to every

job—but if you think that down side is 40 percent, that means most of the time you're going to enjoy your job, and that energy will carry you through the down side."

Once you've come up with a list of possible jobs, based on their core duties, it's important to find someone in that job to speak to, says Butch, in order to find out whether the real-world job matches the

"Two years in IT is an eternity."

So how does a tech-savvy newbie plan for the future? Docherty says the critical first step is to look inside, rather than to temporary market forces. "Ultimately, it's critical that the person looking at a course or program be interested in what they want to take." And if they want to work in IT, they should be prepared to live with constant change.

That may seem like rather obvious, simple advice, but choosing a career direction can be complicated, and the simplest things can be lost in the process.

George Dethle (www.georgedethle.com) is a career consultant and author of *Job Joy: Finding Your Right Work Through the Power of Your Personal Story*. He says most people trying to decide what career to pursue are "influenced by external factors, especially by the significant people around them."

While these people—parents, teachers, and close friends, in many cases—may know the career under well, they are also limited in their thinking by their own biases and are usually not aware of more than a handful of the vast number

description. Ask people working in a particular job what they spend most of their time doing, what they like about the job, what they hate about the job, and what the work is like on a day-to-day basis. Plan these questions in advance, because "it's just as important to get the right question as to get the answer" according to Dethle.

—Sharlene Myers

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Act in haste, repent at leisure

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sharing these to the state of expediency, are benefit of anything resembling English "gotcha's. See us at 6 a.m., coffee on a bye-bye" (Emphasis provided by those who know where to find the online on the keyboard and are aware how they should actually be used.)

Then when you read email tones, you wonder where people went to school, or if they did, or if English was taught. Suddenly, everyone's a writer.

I once belonged to a writer's group that met every month. At one meeting, we were told to provide a synopsis of our writing experience and goals. One seemingly lovely, though discolored, woman wanted to write novels (not novels, novels) because she so loved seeing her friends long lyrical emails.

Honesty.

There is a naive belief, first approaching a connection I fear, that the willingness to overstate through email is somehow acceptable. Does if we were all capable of elevating our writing to a notch above the divine we tend to send, why do we think the rest of the planet needs to see it, which it surely will.

The next time you feel the need to stop, consider these tips:

1. Always write your first draft email in a word processing program. Turn on the grammar and spell checker. Save it. Minimize the screen and go read the newspaper. When you return, revise it by removing adverbs, adjectives, socialization points, all but pertinent people's names, and positive remarks. Stick to simple sentences, too.
2. Copy the text into the body of the email. Do not write in or click the address yet. Go back to the newspaper or watch TV. Police shows are terrific for showing what it might be like to get arrested for writing stilted email.
3. Read your email aloud. Is anybody else you cringing? No? Now put in the email address.
4. Take a breath. Ask yourself, "Do I really want/need to send this?"
5. Minimize the window. Look at it again at least, two hours later.
6. Subject? Send it.
7. Go back to the newspaper and lurk on the rest of the news. ☐

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Figure 1. A schematic diagram of the experimental setup. The subject is seated in a chair, viewing a video screen. The screen displays a target (a red dot) and a starting point (a green dot). The subject's hand is positioned at the starting point. The distance between the starting point and the target is 10 cm. The subject is instructed to move the hand from the starting point to the target. The video screen is 100 cm high and 100 cm wide. The starting point is 50 cm from the left edge of the screen. The target is 50 cm from the right edge of the screen. The subject's hand is 50 cm from the left edge of the screen. The distance between the starting point and the target is 10 cm. The subject is instructed to move the hand from the starting point to the target.

ACKNOWLEDGMENTS



Nokia's has commissioned version of a number of popular video games, including Tomb Raider. It's new M-Cape handset

A handful of handset technologies



If you think cellular phone makers aren't pack any more features into a mobile handset, then you've underestimated the wizards that make them. Cellular phone makers and their technology partners are

busy drumming up the next generation of innovations in the little wall-to-wall domain.

We're not talking about Bluetooth wireless technologies, colour screens, or game ringtones here. Heck, that's old hat.

I've spent the last few months investigating some of the phenomenal new features you'll see later this year or into 2004.

At the Consumer Electronics Show in Las Vegas in January, I hooked up with MobileWise, a company that is reworking the way cellular phones and many other mobile devices behave these days.

The company has developed a mat—sort of like an electronic ink blaster—that charges any appliance or gadget that is placed on it, no wires needed. When you get back home, or perhaps back to the office, simply dump out your cellular phone onto the mat and let it go to work. Little contact points on the phone (or PDA or laptop) draw power from the mat's tiny little metal grids. The grids are only activated if a device is on one of

them, so while the nubs covered by a cellular phone are electrified, all the nubs around it are not, making it safe to touch—or, in my case, spill my coffee onto. (That's all I am.)

Inside the device is a series of chips that can tell the unit what power requirements it needs, and what device is being charged.

In the event that a paper clip or some other object gets underneath the charging gadget, the system is smart enough to shut itself off before any harm can be done.

MobileWise has a bit of a sales job to do. It has to sell the chips that go inside the devices and then sell the main stuff to consumers. The company says—if it a

successful—that this technology will start to appear toward the end of the year and will eventually be integrated into desks and construction.

In fact, this is one area the company is particularly interested in. Representatives told me they are talking to office furniture companies about engineering the technology into desks. It will likely make it into the kitchen too, where you'll power your blender, kettle and waffle maker on an automated countertop.

Even better, the same technology that provides power can also provide a high-speed Internet connection. Imagine placing your laptop on a MobileWare-enabled desk and having it instantly connect to the Internet and draw power for an hour.

A handful of handset technologies

Continued from page 83a

No official price has been set for the device, but Nokia says it will cost under \$750 and says it will hit the market at \$399 or \$499.

Sometime late this year or in early 2004, expect haptics, the science of sensory feedback, to come to a mobile phone.

If you're familiar with force feedback peripherals used with computer games—which provide the feel of shooting bullets or exploding bombs—then you'll already experienced haptics technology.

Immersion Corp. (www.immersion.com),

the company responsible for the majority of force feedback technology in joy sticks on the market today, is investigating theories of putting haptics into cellular phones.

Of course, this is partly in response to the popularity of gaming on colour cellular handsets. When you play that first-person shooter game while waiting for the bus, you'll feel the machine gun fire—for example—then, within the device, but it's not just for gaming.

Immersion demonstrated tactile response when sending a text message on a cellular phone. Send a text now and

the person at the other end will feel a smooth when they receive it. Receive a virtual punch in the shoulder by your best buddy and you'll feel the friendly knock on your phone.

I think the most useful feature for haptics is adding feel to on-screen menus. So often I dial or navigate through menus with a phone's tiny keypad and find that it's difficult to tell if I've pressed the right button. Physical feedback can confirm that the navigation on a small screen is successful. Or you could thumb dial your dad's phone number and feel each of the 10 presses of his phone number if you

only felt nine, you know you mistitled without even looking.

Then there's the idea of adding tactility to ring tones. Today, you can customize a ring tone to the person who is calling. Perhaps *Home on the Range* plays when your mom calls, but add force feedback and you could feel mom's loums. Or, when you boss calls, perhaps you'd experience a sensation in the handset that felt like a tap on the shoulder. Call them vrrrr-mpment? ☐

Canadian writer Andy Walker is based in Berkeley, Calif., and runs the technology advice Web site at www.andrewwalker.com

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Quick tips

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The View menu is an option for toggling your worksheet display between formulas and results. Inside the formulas option to show formulas (you may need to change column widths to see them properly) and disable the option to return to viewing results.

DIY safety net • Excel's Autoforecover tool can save the changes you've made to your workbook at regular intervals in case your

computer crashes or the power goes out. Choose the Save tab and enable the Save Autoforecover. Info: Every 10 Minutes option. Set the number of minutes you prefer (30 minutes is a good choice). Remember, this is just in case your computer crashes. It doesn't eliminate the need to save your data regularly!

Privacy issues • On the Security tab, you will find an option to Remove Personal Information From This File. If you check this option, personal information

about you will be removed from the information included on the workbook's Summary tab when it is saved.

Choose your security level • Also on the Security tab, you will find the Macro Security button, which lets you determine the level of security for running macros. The ideal level is Medium—it will warn you when a file contains macros and will give you the opportunity of choosing to enable or disable them individually, for each file.

Empty cells • Sometimes when you plot a chart, portions of data are missing, so you have blank values in a data series.

Use the Chart tab in the Tools, Options dialog to control how blank cells are plotted. You can choose to not to plot them at all (a blank will show in your line), plot them as zero, or you can let Excel interpolate a value for the missing data based on other data already in the chart.

Create your own lists • The Custom Lists tab lets you create lists of offices, people, provinces, or anything that you regularly enter into a worksheet. When you do, you can simply type one list entry in a cell of the worksheet then drag the cell's fill handle down or across to enter the remaining list items into adjacent cells.

—Helen Bradley

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3 LINES AD.	6 LINES AD.	SINGLE SEM.	MEDIUM SEM.	DOUBLE SEM.
(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)
\$15.00	\$15.00	\$15.00	\$15.00	\$15.00
OTTAWA / ATLANTIC EDITION				
Consideration \$5,000				
3 LINES AD.	6 LINES AD.	SINGLE SEM.	MEDIUM SEM.	DOUBLE SEM.
(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)
\$15.00	\$15.00	\$15.00	\$15.00	\$15.00
MONTREAL EDITION				
Consideration \$5,000				
3 LINES AD.	6 LINES AD.	SINGLE SEM.	MEDIUM SEM.	DOUBLE SEM.
(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)	(1.5W x 1.5W)
\$15.00	\$15.00	\$15.00	\$15.00	\$15.00

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